The Ballarat Naturalist

September 2008

Trailing Goodenia
Goodenia lanata
(Club Logo)

Fungi – Geoff Lay

Geoff Lay explained that by profession he was an actuary. He is a nature photographer with a particular interest in fungi and has worked for Fungi Map. There is a lot less known about fungi than about plants as there are only 11 fully paid mycologists in Australia with 2 being at the Museum of Victoria which gave Geoff good access to advice and information about his area of interest.

Victoria has about 5,000 plants but half a million fungi, mostly micro fungi with 20,000 macro fungi about a quarter of which are documented so there is still a lot to learn in this area. Fungi are more world wide than higher order plants.

Fungi are neither plants nor animals but have their own kingdom. They do not have chlorophyll and therefore cannot create their own energy.

We normally see the fruiting heads of fungi at particular times of year but the large unseen part is there all the year. Macrofungi consist of a mass that resembles tiny white threads that penetrate the material on which the fungus is growing. This is called the mycelium and looks like a tangled mass of cotton wool and can be white, red, blue, orange, brown or black. Once a fungi is established it cannot be removed as taking off the fruiting part does not remove the mycelium. Fungi can come into a garden unseen in mulch and other material.

Plant cells have protective walls of (hard) cellulose. Fungi contain a protein in the chiton group which enable them to soften the wall and absorb the nutrients from the material in which they grow. When the weather is right fungi fruit and produce the bit that is seen. The fruit is 90% water so

it can be produced quickly.
Fungi fruit produce spores which are not seeds but which perform the same function. The spores are very small being 5 to 20 micrometer with 200 fitting on a pinhead. They are produced in large numbers with up to 10 billion being produced by one fruit and may be dispersed by air, water or animals. They vary in size, shape, colour and ornamentation differentiate genera but a microscope is needed to see this.

Depending on the species, fungi can get their nutrition from dead organic matter (saprotrophic) or living tissues (parasitic). If they use living material they can have a detrimental effect (parasitic), no discernible effect (commensal), or a mutual beneficial, symbiotic effect (mycorrhizal). Geoff said that fungi are the only things that can decompose wood or lignum. Termites for instance only transport it. Fungi transport, store, release and recycle nutrients from litter into soil. If it were not for fungi we would be buried in litter.

Mycorrhizal associations where the fungus gets into the root systems of plants enable transformation of nutrients from soil to plants. Carbohydrates from the plant are transferred to the fungus, while soil nutrients are transferred from fungus to plant. This can be essential in low nutrient soils. The networks of fungal hyphae radiate out from roots providing an extensive fine system for the take up of soil-bound nutrients which is more efficient than roots alone. Eucalypts are believed to have 1,000 associated mycorrhizal fungi. Hyphae also bind soil particles, form lichens which contribute to nitrogen fixation and to crust flora on soil, rocks and older wood.

There area two types of wood root. Brown rot fungi destroy cellulose (walls) but are largely unable to attack the dark coloured lignin. The decayed wood maintains a cubical block structure and is brown in colour. White rot fungi have enzymes that attack all parts of wood so they appear lighter in colour and may be spongy, stringy, layered, fibrous or featureless. Fungi need both water and oxygen so this limits their ability to attack wood. Sapwood which is very wet and contains living cells resist majority of decay fungi. Heartwood is dead and may have lower moisture content, but usually contains toxins for protection. Eucalypts which drop their bark can also resist fungi attack. Fungi attack through wounds, fire scars, dead or broken limbs to produce heart rot in older trees. Fungus plus termites leads to hollow trees.

When describing fungi the parts that should be observed include: cap (shape/colour/texture/margins), flesh (thickness/colour/bruising/taste), gills (stem attachment/waxy/spacing/thickness/colour/edges/latex), veil (colour/structure), stem (shape/interior/location/surface/colour/ring/volva), location, substrata (soil/wood/dung/moss) and spores (colour/shape/ornamentation).

In deciding the edibility of fungi Geoff advised that it was best to assume all fungi were poisonous except for those purchased at a shop although he did flippantly say that they could be tested by cutting in half and giving one half to someone else to test before trying oneself.

Geoff showed a series of excellent photographs which demonstrated the characteristics of a number of genera as well as showing his skill as a nature photographer. Photographs were taken at various locations including his garden in Melbourne using natural lighting. Mostly he rests his camera on a small piece of wood because of the long exposures necessary and uses the silvered bladder of a wine cask as a reflector.

Geoff had delayed a trip to Western Australia to speak to us and was on his way with his wife Jannie, staying with Carol before continuing. Their visit to our club was sincerely appreciated.

Peter Dalman

August Excursion: Tullaroop – Claire and Peter Dalman

Nine members making full use of the seats in two cars went on the Tullaroop excursion.

The first stop was at the Miners Rest swamp. This swamp has an area of stiff groundsel (Senecio behrianus). The DSE website states that "Stiff Groundsel is found only in South-eastern Australia. Historical records kept at the Royal Botanic Gardens Herbarium in Melbourne indicate that the plant was once widespread across the Murray-Darling Basin, where it grew on seasonally inundated areas with sandy or sandy clay soils. At present Stiff Groundsel is only known to exist at five wild populations, four at Corop and one near Ballarat." We had unsuccessfully looked for this plant before but last summer the swamp was burnt except for the area where it grew so we were able to see where to expect it when it flowers later this year.

It was then on past Clunes to the Lena Wattleworth Bushland Reserve. Greg had been to the opening of this reserve and told us that Lena was a local naturalist. A brief wander suggested spring would be a better visit time.

The group travelled along Golf Course Road, Pickfords Road, Kierces Road, Beckworth Court Road and then Old Ballarat Road travelling towards Talbot and stopping at a couple of places mostly to observe birds and for Les to rescue a ewe down after delivering a lamb. .

Lunch was at the site of the Stony Creek school. The site, a short distance down the Stony Creek Road is indicated by a recreated post and rail fence. There are some bricks remaining from the old school but the most interesting aspect of the site is stones laid out in the shape of a map of Australia complete with states including Tasmania. This was apparently placed there between 1905 and 1912 when a Miss Elizabeth James was head teacher. There were also stones indicating a number of other garden beds, some in geometrical shapes. It is surmised that the garden beds formed by the rocks would have been planted and tended by the children. An article from the Ballarat Courier provided by Fran indicated that originally a school was built on the site in 1865 with this being replaced by a brick school in 1869. The inspectors report for 1915 included the comment "The reserve is well planted and the garden rockeries and greenhouse carefully tended." The school was initially called Kangaroo Gully and finally closed in 1916.

After lunch it was past the Talbot Conservation Reserve to Talbot for a stop and then on to the Maternity tree near Talbot in Pollocks Road which a few in the group had not seen. This impressive giant River red gum is classified by the National Trust of Victoria. The tree is said to be an aboriginal shelter tree and is estimated to be about 700 years old. The girth of the tree is 15 metres and its hollowed out centre was used by the Jajowurrong clan who were the first inhabitants of the area. Greg said that when the club was first taken to see it by Stella Bedggood they were also shown a midden in a nearby paddock. The tree would have begun its life as a small seedling at about the time the Black Death swept across Europe.

Returning to Talbot it was on past stone building ruins to the Majorca cemetery where in addition to observing the presence of native grasses and other plants it was interesting to read some of the headstones and reflect on how life would have been when this was a gold area. Some of the graves had intricate wrought iron surrounds showing the time consuming work of blacksmiths in the past. The Majorca area was the scene of the last major gold rush (1863) in the area and photos in the main street show the historic extent of the town that once boasted more than 200 shops and stores. Many old wooden structures have rotted away, or were destroyed in the 1985 bushfire that levelled much of the area and a walk along the street enabled the few remaining buildings to be investigated.

The final area visited for the day was the Tullaroop reservoir where we went down the unsigned Bucknall Church Road rather than to the main car park. Around nine species of birds were seen.. We were surprised to see the church itself, which is discretely located in trees in a paddock near the reservoir, and some birds in the water.

The return trip was via Cotswold Road and Mount Cameron-Cotswold Road. crossing the Tullaroop Creek which was flowing and continuing past Merrin Merrin swamp and Middle swamp, which had little water in them, then through Clunes to home.

Despite the weather, over 25 bird species were observed during the day including kookaburras, galahs, carolling magpies, wood duck, mountain duck, grey shrike thrush, white plumed honeyeaters, sulphur crested cockatoos, red rumped parrots, new holland honeyeaters, blue wrens, white throated treecreeper, thornbill, golden whistler, kestrel, Australasian coots, grebe, musk duck, masked lapwing, pipit, pelican and musk lorikeets. There were also possibly fuscous honeyeaters.

Peter and Claire Dalman

Mid Month excursion 20/8/08

Four members set out on a cold but fine morning to Enfield forest. The aim was to photograph specific flowering wattles for the "wattles" publication .We visited several areas but unfortunately, the wattles required were at the same stage as they were about three weeks before, so another excursion is planned for mid September. The bush however looked quite colourful with many areas of pink and red Heath and other wattle species. We also noted many groups of Nodding Greenhood Orchids and the occasional Tall Greenhood Orchid. Birds such as grey shrike thrushes and a honeyeater were heard occasionally but not seen. Frogs were heard in the lake. While photographing a stand of wattles by the road, an echidna was spotted half covered in dirt under a log. We finished the day with a picnic lunch at a town picnic ground, also discovering that all amenities there have now been removed to a new location. We then headed back to Ballarat after a pleasant days outing.

Val Hocking

Correction from the August "Ballarat Naturalist"

Re-The report of Greg Binn's talk on Honeyeaters
The reference to the **Painted Honeyeater** should read that it is a visitor *from* the drier areas north of the Divide.

Committee Recommendation

"That the SEANA Autumn Camp, 2010, hosted by Field Naturalists Club of Ballarat be held on Friday 19 – Monday 22 March" (midway between Labor Day (8 March) and Easter Sunday (4 April)).

Members are invited to suggest excursions and catering venues for this event.

Angair: Wildflower and Art Show, 20 & 21 September 2008.

Minutes of the General Meeting 1st August 2008

Opening and Apologies.

The President, Peter Dalman, opened the meeting and welcomed 18 members and visitors.

Apologies were received from Elaine Gregurke, Nina Netherway, Zelda Martin, Bill Murphy, John Mildren, Lyndsay Fink, Denis and Elisabeth Thurgood

The apologies were accepted ion the motion of Peter Billing, seconded Carol Hall.

Minutes of previous meeting were summarised in the Ballarat Naturalist and tabled.
Accepted as read on the motion of Carol Hall, Seconded: John Gregurke

Reports
Wattle Sub-committee: Small print runs, colour photocopied and spiral bound – retail $20; Key and General Information circulated for proof reading. Species descriptions being researched and edited. Photography continuing.

General Business
Claire and Peter Dalman volunteered to write excursion report on Sunday.
Wattles Sub-committee meeting: 9.30am Thursday 7 August @ 1John St, Wendouree.

Show and Tell
Claire Dalman showed a block of compacted sand and shells from the Gulf of Carpentaria at Karumba.

Field Reports
John Gregurke: Masked Lapwing nesting on the median strip on Creswick Road near Courier office.
Carol Hall: Swans building nest on east side of Lake Wendouree.
Greg Binns: 6 Black-fronted Dotterel near Windmill Drive, Lake Wendouree.
Peter Dalman: Magpie Larks and Willy Wagtails seen at most places on a recent trip to north-west Queensland. Magpies not seen in the far north.

Excursion Arrangements:
Sunday 3 August: Tullaroop, Leaders: Claire and Peter Dalman.
Mid-month Excursion: Wednesday 20 August; Enfield to photograph *Acacia acinacea* and *A. myrtifolia.*

Syllabus Item: Geoff Lay spoke on "Fungi". He showed excellent slides of a variety of fungi, many of which were photographed in his own Melbourne garden. Peter Dalman thanked Geoff and presented him with a hamper.

Supper

CALENDAR

September

Fri 5th Wattles of the Ballarat Region—John Gregurke

Sat 6th Mt Cole– Dr Fran Hanrahan– club member

Wed 10th Mid month excursion to Enfield Forest– wattle photography

Club Campout Inglewood 19th – 21st September

Inglewood Motel and Caravan Park Ph

October

Fri 3rd Tina Bell from The Bushfire Co-operative Research Centre Creswick

Sun 5th Mt Beckworth led by club members

17-19 Oct SEANA Spring Camp at Healesville hosted by Ringwood FNC

Committee

President............................Mr Peter Dalman
Vice-President..................Mr Greg Binns
Secretary............................Mr John Gregurke
Treasurer ....Mr Les Hanrahan

Miss Helen Burgess ....
Mrs Carol Hall ....
Mr John Morrish ....
Mrs Claire Dalman.....................
Mrs Val Hocking ....
Ms Nina Netherway (editor) ......

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Meetings are held at Ballarat Horticultural Centre, cnr. Gregory & Gillies Sts (VicRoads 254 F8) on the first Friday of the month at 7.30pm.

Excursions: Depart from Ballarat Market Place (formerly Creswick Plaza) Creswick Rd., Ballarat (VicRoads 255 M10) at 9.30am unless otherwise specified.

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